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Intelligent Information and Database Systems

By the dawn of the new millennium, robotics has undergone a major transformation in scope and dimensions. This expansion has been brought about by the maturity of the field and the advances in its related technologies. From a largely dominant industrial focus, robotics has been rapidly expanding into the challenges of the human world. The new generation of robots is expected to safely and dependably co-habitat with humans in homes, workplaces, and communities, providing support in services, entertainment, education, health care, manufacturing, and assistance. Beyond its impact on physical robots, the body of knowledge robotics has produced is revealing a much wider range of applications reaching across - verse research areas and scientific disciplines, such as: biomechanics, haptics, neurosciences, virtual simulation, animation, surgery, and sensor networks among others. In return, the challenges of the new emerging areas are providing an abundant source of stimulation and insights for the field of robotics. It is indeed at the intersection of disciplines that the most striking advances happen. The goal of the series of Springer Tracts in Advanced Robotics (STAR) is to bring, in a timely fashion, the latest advances and developments in robotics on the basis of their significance and quality. It is our hope that the wider dissemination of research developments will stimulate more exchanges and

collaborations among the research community and contribute to further advancement of this rapidly growing field.

Machinery

Distributed autonomous robotic systems (DARS) are systems composed of multiple autonomous units such as modules, cells, processors, agents, and robots. Combination or cooperative operation of multiple autonomous units is expected to lead to desirable features such as flexibility, fault tolerance, and efficiency. The DARS is the leading established conference on distributed autonomous systems. All papers have the common goal to contribute solutions to the very demanding task of designing distributed systems to realize robust and intelligent robotic systems.

Simulation, Modeling, and Programming for Autonomous Robots

Want to develop novel robot applications, but don't know how to write a mapping or object-recognition system? You're not alone, but you're certainly not without help. By combining real-world examples with valuable knowledge from the Robot Operating System (ROS) community, this practical book provides a set of motivating recipes for solving specific robotics use cases. Ideal for enthusiasts,

from students in robotics clubs to professional robotics scientists and engineers, each recipe describes a complete solution using ROS open source libraries and tools. You'll learn how to complete tasks described in the recipes, as well as how to configure and recombine components for other tasks. If you're familiar with Python, you're ready to go. Learn fundamentals, including key ROS concepts, tools, and patterns Program robots that perform an increasingly complex set of behaviors, using the powerful packages in ROS See how to easily add perception and navigation abilities to your robots Integrate your own sensors, actuators, software libraries, and even a whole robot into the ROS ecosystem Learn tips and tricks for using ROS tools and community resources, debugging robot behavior, and using C++ in ROS

Motion and Operation Planning of Robotic Systems

This book addresses the broad multi-disciplinary topic of robotics, and presents the basic techniques for motion and operation planning in robotics systems. Gathering contributions from experts in diverse and wide ranging fields, it offers an overview of the most recent and cutting-edge practical applications of these methodologies. It covers both theoretical and practical approaches, and elucidates the transition from theory to implementation. An extensive analysis is provided, including humanoids, manipulators, aerial robots and ground mobile robots. 'Motion and Operation Planning of Robotic Systems' addresses the following topics: *The

theoretical background of robotics. *Application of motion planning techniques to manipulators, such as serial and parallel manipulators. *Mobile robots planning, including robotic applications related to aerial robots, large scale robots and traditional wheeled robots. *Motion planning for humanoid robots. An invaluable reference text for graduate students and researchers in robotics, this book is also intended for researchers studying robotics control design, user interfaces, modelling, simulation, sensors, humanoid robotics.

On-Line Trajectory Generation in Robotic Systems

Twin Plant News

This book constitutes the refereed proceedings of the International Workshop on Robotics in Smart Manufacturing, WRSM 2013, held in Porto, Portugal, in June 2013. The 20 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers address issues such as robotic machining, off-line robot programming, robot calibration, new robotic hardware and software architectures, advanced robot teaching methods, intelligent warehouses, robot co-workers and application of robots in the textile industry.

Introduction to Robotics

Modern Robotics

This book constitutes the refereed proceedings of the First International Conference on Simulation, Modeling, and Programming for Autonomous Robots, SIMPAR 2008, held in Venice, Italy, in November 2008. The 29 revised full papers and 21 revised poster papers presented were carefully reviewed and selected from 42 submissions. The papers address all current issues of robotics applications and simulation environments thereof, such as 3D robot simulation, reliability, scalability and validation of robot simulation, simulated sensors and actuators, offline simulation of robot design, online simulation with realtime constraints, simulation with software/hardware-in-the-loop, middleware for robotics, modeling framework for robots and environments, testing and validation of robot control software, standardization for robotic services, communication infrastructures in distributed robotics, interaction between sensor networks and robots, human robot interaction, and multirobot. The papers are organized in topical sections on simulation, programming, and applications.

Fundamentals of Robotic Mechanical Systems

The Valuation Handbook – U.S. Guide to Cost of Capital, 2011 Essentials Edition includes two sets of valuation data: Data previously published in the 2011 Duff & Phelps Risk Premium Report Data previously published in the Morningstar/Ibbotson 2011 Stocks, Bonds, Bills, and Inflation (SBBI) Valuation Yearbook The Valuation Handbook – 2011 U.S. Essentials Edition includes data through December 31, 2010, and is intended to be used for 2011 valuation dates. The Valuation Handbook – U.S. Guide to Cost of Capital, Essentials Editions are designed to function as historical archives of the two sets of valuation data previously published annually in: The Morningstar/Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Valuation Yearbook from 1999 through 2013 The Duff & Phelps Risk Premium Report from 1999 through 2013 The Duff & Phelps Valuation Handbook – U.S. Guide to Cost of Capital from 2014 The Valuation Handbook – U.S. Essentials Editions are ideal for valuation analysts needing "historical" valuation data for use in: The preparation of carve-out historical financial statements, in cases where historical goodwill impairment testing is necessary Valuing legal entities as of vintage date for tax litigation related to a prior corporate restructuring Tax litigation related to historical transfer pricing policies, etc. The Valuation Handbook – U.S. Essentials Editions are also designed to serve the needs of: Corporate finance officers for pricing or evaluating mergers and acquisitions, raising private or public equity, property taxation, and stakeholder disputes Corporate officers for the evaluation of investments for capital budgeting decisions Investment bankers for pricing public offerings, mergers and acquisitions, and private equity financing

CPAs who deal with either valuation for financial reporting or client valuations issues Judges and attorneys who deal with valuation issues in mergers and acquisitions, shareholder and partner disputes, damage cases, solvency cases, bankruptcy reorganizations, property taxes, rate setting, transfer pricing, and financial reporting For more information about Duff & Phelps valuation data resources published by Wiley, please visit www.wiley.com/go/valuationhandbooks.

Distributed Autonomous Robotic Systems 3

Computer-aided Technologies

Robotic automation has become ubiquitous in the modern manufacturing landscape, spanning an overwhelming range of processes and applications-- from small scale force-controlled grinding operations for orthopedic joints to large scale composite manufacturing of aircraft fuselages. Smart factories, seamlessly linked via industrial networks and sensing, have revolutionized mass production, allowing for intelligent, adaptive manufacturing processes across a broad spectrum of industries. Against this background, an emerging group of researchers, designers, and fabricators have begun to apply robotic technology in the pursuit of architecture, art, and design, implementing them in a range of processes and

scales. Coupled with computational design tools the technology is no longer relegated to the repetitive production of the assembly line, and is instead being employed for the mass-customization of non-standard components. This radical shift in protocol has been enabled by the development of new design to production workflows and the recognition of robotic manipulators as “multi-functional” fabrication platforms, capable of being reconfigured to suit the specific needs of a process. The emerging discourse surrounding robotic fabrication seeks to question the existing norms of manufacturing and has far reaching implications for the future of how architects, artists, and designers engage with materialization processes. This book presents the proceedings of Rob|Arch2014, the second international conference on robotic fabrication in architecture, art, and design. It includes a Foreword by Sigrid Brell-Cokcan and Johannes Braumann, Association for Robots in Architecture. The work contained traverses a wide range of contemporary topics, from methodologies for incorporating dynamic material feedback into existing fabrication processes, to novel interfaces for robotic programming, to new processes for large-scale automated construction. The latent argument behind this research is that the term ‘file-to-factory’ must not be a reductive celebration of expediency but instead a perpetual challenge to increase the quality of feedback between design, matter, and making.

Robot Manipulators

Catalog of Copyright Entries

Industries that use pumps, seals and pipes will also use valves and actuators in their systems. This key reference provides anyone who designs, uses, specifies or maintains valves and valve systems with all of the critical design, specification, performance and operational information they need for the job in hand. Brian Nesbitt is a well-known consultant with a considerable publishing record. A lifetime of experience backs up the huge amount of practical detail in this volume. * Valves and actuators are widely used across industry and this dedicated reference provides all the information plant designers, specifiers or those involved with maintenance require * Practical approach backed up with technical detail and engineering know-how makes this the ideal single volume reference * Compares and contracts valve and actuator types to ensure the right equipment is chosen for the right application and properly maintained

Tagungsband des 2. Kongresses Montage Handhabung Industrieroboter

Springer Handbook of Robotics

“Personalised Nutrition” represents any initiative that attempts to provide tailor-made healthy eating advice based on the nutritional needs of each individual, as these are dictated by the individual’s behaviour, phenotype and/or genotype, and their interactions. This Special Issue of Nutrients is dedicated to the development, implementation and assessment of the effectiveness of evidence-based “Personalised Nutrition” strategies. In this regard, a selection of reviews and original research manuscripts will bring together the latest evidence on how lifestyle habits, physiology, nutraceuticals, gut microbiome and genetics can be integrated into nutritional solutions, specific to the needs of each individual, for maintaining health and preventing diseases.

Personalized Nutrition

This book presents the state of the art in reinforcement learning applied to robotics both in terms of novel algorithms and applications. It discusses recent approaches that allow robots to learn motor skills and presents tasks that need to take into account the dynamic behavior of the robot and its environment, where a kinematic movement plan is not sufficient. The book illustrates a method that learns to generalize parameterized motor plans which is obtained by imitation or reinforcement learning, by adapting a small set of global parameters and appropriate kernel-based reinforcement learning algorithms. The presented applications explore highly dynamic tasks and exhibit a very efficient learning

process. All proposed approaches have been extensively validated with benchmarks tasks, in simulation and on real robots. These tasks correspond to sports and games but the presented techniques are also applicable to more mundane household tasks. The book is based on the first author's doctoral thesis, which won the 2013 EURON Georges Giralt PhD Award.

Finite and Instantaneous Screw Theory in Robotic Mechanism

This book presents a finite and instantaneous screw theory for the development of robotic mechanisms. It addresses the analytical description and algebraic computation of finite motion, resulting in a generalized type synthesis approach. It then discusses the direct connection between topology and performance models, leading to an integrated performance analysis and design framework. The book then explores parameter uncertainty and multiple performance requirements for reliable, optimal design methods, and describes the error accumulation principle and parameter identification algorithm, to increase robot accuracy. It proposes a unified and generic methodology, and applies to the invention, analysis, design, and calibration of robotic mechanisms. The book is intended for researchers, graduate students and engineers in the fields of robotic mechanism and robot design and applications./div

Robot Dynamics And Control

The book presents the proceedings of Rob/Arch 2016, the third international conference on robotic fabrication in architecture, art, and design. The work contains a wide range of contemporary topics, from methodologies for incorporating dynamic material feedback into existing fabrication processes, to novel interfaces for robotic programming, to new processes for large-scale automated construction. The latent argument behind this research is that the term 'file-to-factory' must not be a reductive celebration of expediency but instead a perpetual challenge to increase the quality of feedback between design, matter, and making.

Handbook of Valves and Actuators

Comprehensive Materials Processing provides students and professionals with a one-stop resource consolidating and enhancing the literature of the materials processing and manufacturing universe. It provides authoritative analysis of all processes, technologies, and techniques for converting industrial materials from a raw state into finished parts or products. Assisting scientists and engineers in the selection, design, and use of materials, whether in the lab or in industry, it matches the adaptive complexity of emergent materials and processing technologies.

Extensive traditional article-level academic discussion of core theories and applications is supplemented by applied case studies and advanced multimedia features. Coverage encompasses the general categories of solidification, powder, deposition, and deformation processing, and includes discussion on plant and tool design, analysis and characterization of processing techniques, high-temperatures studies, and the influence of process scale on component characteristics and behavior. Authored and reviewed by world-class academic and industrial specialists in each subject field Practical tools such as integrated case studies, user-defined process schemata, and multimedia modeling and functionality Maximizes research efficiency by collating the most important and established information in one place with integrated applets linking to relevant outside sources

Optimization for Robot Modelling with MATLAB

This book addresses optimization in robotics, in terms of both the configuration space and the metal structure of the robot arm itself; and discusses, describes and builds different types of heuristics and algorithms in MATLAB. In addition, the book includes a wealth of examples and exercises. In particular, it enables the reader to write a MATLAB code for all the related problems in robotics. The book also offers detailed descriptions of and builds from scratch several types of optimization algorithms using MATLAB and simplified methods, especially for inverse problems and avoiding singularities. Each chapter features examples and exercises to

enhance the reader's comprehension. Accordingly, the book offers the reader a better understanding of robot analysis from an optimization standpoint.

Geometric Tools for Computer Graphics

The second edition of this handbook provides a state-of-the-art cover view on the various aspects in the rapidly developing field of robotics. Reaching for the human frontier, robotics is vigorously engaged in the growing challenges of new emerging domains. Interacting, exploring, and working with humans, the new generation of robots will increasingly touch people and their lives. The credible prospect of practical robots among humans is the result of the scientific endeavour of a half a century of robotic developments that established robotics as a modern scientific discipline. The ongoing vibrant expansion and strong growth of the field during the last decade has fueled this second edition of the Springer Handbook of Robotics. The first edition of the handbook soon became a landmark in robotics publishing and won the American Association of Publishers PROSE Award for Excellence in Physical Sciences & Mathematics as well as the organization's Award for Engineering & Technology. The second edition of the handbook, edited by two internationally renowned scientists with the support of an outstanding team of seven part editors and more than 200 authors, continues to be an authoritative reference for robotics researchers, newcomers to the field, and scholars from related disciplines. The contents have been restructured to achieve four main

objectives: the enlargement of foundational topics for robotics, the enlightenment of design of various types of robotic systems, the extension of the treatment on robots moving in the environment, and the enrichment of advanced robotics applications. Further to an extensive update, fifteen new chapters have been introduced on emerging topics, and a new generation of authors have joined the handbook's team. A novel addition to the second edition is a comprehensive collection of multimedia references to more than 700 videos, which bring valuable insight into the contents. The videos can be viewed directly augmented into the text with a smartphone or tablet using a unique and specially designed app.

Springer Handbook of Robotics Multimedia Extension Portal:

<http://handbookofrobotics.org/>

Grippers in Motion

Der MHI e.V. ist ein Netzwerk leitender Universitätsprofessoren aus dem deutschsprachigen Raum, die sowohl grundlagenorientiert als auch anwendungsnah in der Montage, Handhabung und Industrierobotik erfolgreich forschend tätig sind. Die Gründung der Gesellschaft erfolgte im Frühjahr 2012. Der MHI e.V. hat derzeit 20 Mitglieder, die über ihre Institute und Lehrstühle zurzeit ca. 1.000 Wissenschaftler repräsentieren. Die übergeordnete Zielsetzung des MHI e.V. ist die Förderung der Zusammenarbeit von deutschsprachigen Wissenschaftlerinnen und Wissenschaftlern untereinander, sowie mit der Industrie

im Bereich Montage, Handhabung und Industrierobotik zur Beschleunigung der Forschung, Optimierung der Lehre und zur Verbesserung der internationalen Wettbewerbsfähigkeit der deutschen Industrie in diesem Bereich. Das Kolloquium fokussiert auf einen akademischen Austausch auf hohem Niveau, um die gewonnenen Forschungsergebnisse zu verteilen, synergetische Effekte und Trends zu bestimmen, die Akteure persönlich zu verbinden und das Forschungsfeld sowie die MHI-Gemeinschaft zu stärken.

Programming Robots with ROS

The aim of this book is to present the latest applications, trends, and developments of computer-aided technologies (CAx). Computer-aided technologies are the core of product lifecycle management (PLM) and human lifecycle management (HUM). This book has seven chapters, organized in two sections: "Computer-Aided Technologies in Engineering" and "Computer-Aided Technologies in Medicine." The first section treats the different aspects of PLM, including design, simulations and analysis, manufacturing, production planning, and quality assurance. In the second part of the book are presented CAx applications in medicine focused on clinical decision, diagnosis, and biosensor design. CAx plays a key role in a variety of engineering and medical applications, bringing a lot of benefits in product life cycle, extending and improving human life.

Micro-Assembly Technologies and Applications

Learning Motor Skills

A modern and unified treatment of the mechanics, planning, and control of robots, suitable for a first course in robotics.

Pal-las, diccionario enciclopédico manual en cinco idiomas español, francés, inglés, alemán é italiano, 165,000 artículos--4,000 grabados

PRODUCTS & SERVICES

This self-contained introduction to practical robot kinematics and dynamics includes a comprehensive treatment of robot control. It provides background material on terminology and linear transformations, followed by coverage of kinematics and inverse kinematics, dynamics, manipulator control, robust control, force control, use of feedback in nonlinear systems, and adaptive control. Each topic is supported by examples of specific applications. Derivations and proofs are

included in many cases. The book includes many worked examples, examples illustrating all aspects of the theory, and problems.

Handbook of African Medicinal Plants, Second Edition

With over 50,000 distinct species in sub-Saharan Africa alone, the African continent is endowed with an enormous wealth of plant resources. While more than 25 percent of known species have been used for several centuries in traditional African medicine for the prevention and treatment of diseases, Africa remains a minor player in the global natural products market largely due to lack of practical information. This updated and expanded second edition of the Handbook of African Medicinal Plants provides a comprehensive review of more than 2,000 species of plants employed in indigenous African medicine, with full-color photographs and references from over 1,100 publications. The first part of the book contains a catalog of the plants used as ingredients for the preparation of traditional remedies, including their medicinal uses and the parts of the plant used. This is followed by a pharmacognostical profile of 170 of the major herbs, with a brief description of the diagnostic features of the leaves, flowers, and fruits and monographs with botanical names, common names, synonyms, African names, habitat and distribution, ethnomedicinal uses, chemical constituents, and reported pharmacological activity. The second part of the book provides an introduction to African traditional medicine, outlining African cosmology and beliefs as they relate

to healing and the use of herbs, health foods, and medicinal plants. This book presents scientific documentation of the correlation between the observed folk use and demonstrable biological activity, as well as the characterized constituents of the plants.

Valuation Handbook - U.S. Guide to Cost of Capital

Do you spend too much time creating the building blocks of your graphics applications or finding and correcting errors? Geometric Tools for Computer Graphics is an extensive, conveniently organized collection of proven solutions to fundamental problems that you'd rather not solve over and over again, including building primitives, distance calculation, approximation, containment, decomposition, intersection determination, separation, and more. If you have a mathematics degree, this book will save you time and trouble. If you don't, it will help you achieve things you may feel are out of your reach. Inside, each problem is clearly stated and diagrammed, and the fully detailed solutions are presented in easy-to-understand pseudocode. You also get the mathematics and geometry background needed to make optimal use of the solutions, as well as an abundance of reference material contained in a series of appendices. Features Filled with robust, thoroughly tested solutions that will save you time and help you avoid costly errors. Covers problems relevant for both 2D and 3D graphics programming. Presents each problem and solution in stand-alone form allowing you the option of

reading only those entries that matter to you. Provides the math and geometry background you need to understand the solutions and put them to work. Clearly diagrams each problem and presents solutions in easy-to-understand pseudocode. Resources associated with the book are available at the companion Web site www.mkp.com/gtcg. * Filled with robust, thoroughly tested solutions that will save you time and help you avoid costly errors. * Covers problems relevant for both 2D and 3D graphics programming. * Presents each problem and solution in stand-alone form allowing you the option of reading only those entries that matter to you. * Provides the math and geometry background you need to understand the solutions and put them to work. * Clearly diagrams each problem and presents solutions in easy-to-understand pseudocode. * Resources associated with the book are available at the companion Web site www.mkp.com/gtcg.

3D Printing of Metals

This volume collects about 20 contributions on the topic of robotic construction methods. It is a proceedings volume of the robarch2012 symposium and workshop, which will take place in December 2012 in Vienna. Contributions will explore the current status quo in industry, science and practitioners. The symposium will be held as a biennial event. This book is to be the first of the series, comprising the current status of robotics in architecture, art and design.

Rob|Arch 2012

Robot manipulators are developing more in the direction of industrial robots than of human workers. Recently, the applications of robot manipulators are spreading their focus, for example Da Vinci as a medical robot, ASIMO as a humanoid robot and so on. There are many research topics within the field of robot manipulators, e.g. motion planning, cooperation with a human, and fusion with external sensors like vision, haptic and force, etc. Moreover, these include both technical problems in the industry and theoretical problems in the academic fields. This book is a collection of papers presenting the latest research issues from around the world.

Robotic Fabrication in Architecture, Art and Design 2014

Mechanical engineering, an engineering discipline borne of the needs of the industrial revolution, is once again asked to do its substantial share in the call for industrial renewal. The general call is urgent as we face profound issues of productivity and competitiveness that require engineering solutions, among others. The Mechanical Engineering Series features graduate texts and research monographs intended to address the need for information in contemporary areas of mechanical engineering. The series is conceived as a comprehensive one that covers a broad range of concentrations important to mechanical engineering

graduate education and research. We are fortunate to have a distinguished roster of consulting editors on the advisory board, each an expert in one of the areas of concentration. The names of the consulting editors are listed on the next page of this volume. The areas of concentration are: applied mechanics; biomechanics; computational mechanics; dynamic systems and control; energetics; mechanics of materials; processing; thermal science; and tribology.

Robot Analysis

3D printing is rapidly emerging as a key manufacturing technique that is capable of serving a wide spectrum of applications, ranging from engineering to biomedical sectors. Its ability to form both simple and intricate shapes through computer-controlled graphics enables it to create a niche in the manufacturing sector. Key challenges remain, and a great deal of research is required to develop 3D printing technology for all classes of materials including polymers, metals, ceramics, and composites. In view of the growing importance of 3D manufacturing worldwide, this Special Issue aims to seek original articles to further assist in the development of this promising technology from both scientific and technological perspectives. Targeted reviews, including mini-reviews, are also welcome, as they play a crucial role in educating students and young researchers.

Sheet Metal Industries

Complete, state-of-the-art coverage of robot analysis This unique book provides the fundamental knowledge needed for understanding the mechanics of both serial and parallel manipulators. Presenting fresh and authoritative material on parallel manipulators that is not available in any other resource, it offers an in-depth treatment of position analysis, Jacobian analysis, statics and stiffness analysis, and dynamical analysis of both types of manipulators, including a discussion of industrial and research applications. It also features: * The homotopy continuation method and dialytic elimination method for solving polynomial systems that apply to robot kinematics * Numerous worked examples and problems to reinforce learning * An extensive bibliography offering many resources for more advanced study Drawing on Dr. Lung-Wen Tsai's vast experience in the field as well as recent research publications, Robot Analysis is a first-rate text for upper-level undergraduate and graduate students in mechanical engineering, electrical engineering, and computer studies, as well as an excellent desktop reference for robotics researchers working in industry or in government.

Comprehensive Materials Processing

Micro-assembly is a key enabling technology for cost effective manufacture of new

generations of complex micro products. It is also a critical technology for retaining industrial capabilities in high labour cost areas such as Europe since up to 80% of the production cost in some industries is attributed directly to assembly processes. With the continuous trend for product miniaturisation, the scientific and technological developments in micro-assembly are expected to have a significant long-term economic, demographic and social impact. A distinctive feature of the process is that surface forces are often dominant over gravity forces, which determines a number of specific technical challenges. Critical areas which are currently being addressed include development of assembly systems with high positional accuracy, micro gripping methods that take into account the adhesive surface forces, high precision micro-feeding techniques and micro-joining processes. Micro-assembly has developed rapidly over the last few years and all the predictions are that it will remain a critical technology for high value products in a number of key sectors such as healthcare, communications, defence and aerospace. The key challenge is to match the significant technological developments with a new generation of micro products that will establish firmly micro-assembly as a core manufacturing process.

Conjectures and Refutations

Includes Part 1A: Books and Part 1B: Pamphlets, Serials and Contributions to Periodicals

Catalog of Copyright Entries. Third Series

Robotic Fabrication in Architecture, Art and Design 2016

Robotics in Smart Manufacturing

Grippers in Motion provides a comprehensive, practice-oriented guide to the fascinating details of automation processes involving gripping and manipulation. This intriguing and colorful book leads the reader from the history of automation and robotics to the fundamentals of the gripping process as well as the interaction of the gripping process with individual workpieces. Boundary conditions and initial situation of the gripping process are defined, and how subsequent motion follows gripping is shown. The implementation of these motion processes, from simple linear motions to the kinematics of multiple axes, is illustrated in a practical way. This practical introduction motivates students and even professionals to learn more about the world of robotic grippers. Grippers in Motion includes a spectrum of real-world applications demonstrating the possibilities and varieties of automation in practice.

Proceedings

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